Effects of vitamin/mineral supplementation on the prevalence of histological dysplasia and early cancer of the esophagus and stomach: results from the Dysplasia Trial in Linxian, China

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Journal: Cancer Epidemiol Biomarkers Prev 1994; 3(2):167-72

Abstract: Linxian, China has some of the highest rates of esophageal/gastric cardia cancer in the world, and epidemiological evidence suggests that chronically low intake of micronutrients may contribute to these high cancer rates. To examine whether supplementation with multiple vitamins and minerals can affect the occurrence of esophageal/gastric cardia cancer in this population, a two-arm randomized nutrition intervention trial was conducted among 3318 Linxian residents with cytological evidence of esophageal dysplasia. During the 6-year intervention, esophageal/gastric cardia cancer mortality was 8% lower among those receiving the active supplements. After 30 and 72 months of intervention, endoscopic surveys were carried out to see if the nutritional supplements had affected the prevalence of clinically silent precancerous lesions and early invasive cancers of the esophagus and stomach. In the first survey, in 1987, 833 subjects were endoscoped; in the second survey, in 1991, 396 subjects were examined. The histological diagnoses from each survey were compared by treatment group. Cancer or dysplasia was diagnosed in 28% of the subjects endoscoped in 1987 and 24% of those examined in 1991. The odds ratio for subjects in the treatment group (versus those in the placebo group) having esophageal or gastric dysplasia or cancer was 0.84 (95% confidence interval, 0.61-1.15) in 1987 and 0.86 (0.54-1.38) in 1991. Although modest protective effects on worst overall diagnosis were seen in the supplemented group in both surveys, none of the results was statistically significant, and the findings must be considered inconclusive.(ABSTRACT TRUNCATED AT 250 WORDS)